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Attorney Docket No. 076326-0228

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Robert KOPETZKY *et al.*
Title: A DRIVE UNIT FOR A SAFETY BELT TENSIONER
Appl. No.: 10/076,270
Filing Date: February 19, 2002
Examiner: Scott J. HAUGLAND
Art Unit: 3654

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BRIEF ON APPEAL

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Commissioner for Patents
PO Box 1450
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Sir:

This Brief on Appeal follows the Notice of Appeal filed March 9, 2004 and the Advisory Action of February 11, 2004.

Under the provisions of 37 C.F.R. § 1.192, this Appeal Brief is being filed in triplicate together with a check in the amount of \$330.00 covering the Rule 17(c) appeal fee. If this fee is deemed to be insufficient, authorization is hereby given to charge any deficiency (or credit any balance) to the undersigned deposit account 19-0741.

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(1) REAL PARTY IN INTEREST

Although TAKATA-(EUROPE) Vehicle Safety Technology GmbH is the assignee of record for U.S. Application No. 10/076,270, the aforementioned assignee has changed its name to: TAKATA-PETRI (Ulm) GmbH. Accordingly, the real party in interest is TAKATA-PETRI (Ulm) GmbH.

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(2) RELATED APPEALS AND INTERFERENCES

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Appellants, Appellants' legal representative, and Assignee know of no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

(3) STATUS OF CLAIMS

Claims 1-10 are cancelled. Claims 11-20 are pending in the application, were finally rejected, and are appealed. A clean copy of pending claims 11-20 is set forth in the Appendix in § 9.

(4) STATUS OF AMENDMENTS

Claims 1-10 were canceled and claims 11-20 were added, by way of Preliminary Amendment, on February 19, 2002, *i.e.*, the filing date of the instant application. After a first Office Action issued on March 6, 2003, claims 11 and 20 (*i.e.*, the only pending independent claims) were amended on September 8, 2003. The Examiner finally rejected claims 11-20 on November 25, 2003. On January 20, 2004, Applicants contested the validity of the rejection of claims 11-20, without presenting after-final amendments. The Examiner maintained the rejection of claims 11-20 in an Advisory Action issued on February 11, 2004.

(5) SUMMARY OF INVENTION

As shown in Figures 1-3, Applicants partly or fully coat (with a coating material 16) the inner surfaces of two parallel plates 12 of a drive chamber 10.¹ As a result, the leakage of gas between a drive band 20 (positioned between the plates 12) and the plates 12 in the drive unit is reduced and the pressure between the plates 12 is correspondingly increased.² Moreover, Applicants achieved this increase in pressure even when: (a) the drive band 20 was imperfectly manufactured and/or was a conventional (*i.e.*, single-ply) drive band; and (b) the plates 12 were not perfectly parallel.³

One embodiment of the invention addresses a drive unit for a safety belt tensioner having a drive and being capable of being triggered; the drive unit includes a drive chamber 10 which is configured to contain the drive and which includes two connected plates 12 extending parallel to one another.⁴ The drive chamber 10 also includes a drive band 20 having at least one end fastened to a drive shaft 18.⁵ An interior of the drive chamber 10 is adapted to be exposed to an expanding gas coming from a gas generator.⁶ The surface of each plate 12 that faces the other plate 12 is coated with a coating material 16 configured to reduce the amount of gas that escapes through an interface between the edges 22 of the drive band 20 and the facing surfaces of the plates 12.⁷

In a further embodiment of the drive unit, the coating material 16 may have a plurality of layers.⁸ Moreover, the coating material 16 may have layers of different materials.⁹

¹ See p. 2, lines 14-22, p. 4, lines 17-20 (§§ [0007], [0019] of the published application).

² See p. 5, line 20 – p. 6, line 11 (§§ [0024] – [0025] of the published application).

³ See *id.*; see also, p. 2, line 14 – p. 3, line 2 (§ [0007] of the published application)

⁴ See claims 1 and 11 as originally filed.

⁵ See p. 5, lines 11-15 (§ [0022] of the published application).

⁶ See *id.*

⁷ See p. 4, lines 17-19, p. 5, line 20 – p. 6, line 2 (§§ [0019] and [0024] of the published application).

⁸ See p. 3, lines 3 – 7 (§ [0009] of the published application).

⁹ See *id.*

In another further embodiment of the drive unit, the thickness of the coating material 16 may vary in different sections of the surfaces of the plate 12 such as, for example, to create a controlled pressure change between the plates 12 when the drive band 20 is driven by the high-pressure gas.¹⁰

In another further embodiment of the drive unit, the coating material 16 may have one or more films. Moreover, the films for the coating of the plates 12 may be adhesive or be applied by means of an adhesive.¹¹

In another further embodiment of the drive unit, the coating material 16 may be soft.¹²

In another further embodiment of the drive unit, the drive band 20 may include edges 22 partly penetrating into the coating material 16.¹³

In another further embodiment of the drive unit, a surface-near layer of the coating material 16 may be configured to be removed by the drive band 20 and may be piled up in front of the drive band 20 in the direction of expansion on the triggering of the drive and, therefore, additionally reduce the gas exchange through an interface between the band 20 and the facing surfaces of the plates 12.¹⁴

Another embodiment of the invention addresses a safety belt tensioner having a drive unit; the drive unit includes a drive chamber 10 which is configured to contain the drive unit and which includes two connected plates 12 extending parallel to one another.¹⁵ The drive chamber 10 also includes a drive band 20 having at least one end fastened to a drive shaft 18.¹⁶ An interior of the drive chamber 10 is adapted to be exposed to an expanding gas

¹⁰ See p. 3, lines 8 – 13 (§ [0010] of the published application).

¹¹ See p. 3, lines 14 – 17 (§ [0011] of the published application).

¹² See p. 3, lines 18 – 21 (§ [0012] of the published application).

¹³ See *id.*

¹⁴ See p. 3, line 22 – p. 4, line 4 (§ [0013] of the published application).

¹⁵ See claims 10 and 20 as originally filed.

¹⁶ See p. 5, lines 11-15 (§ [0022] of the published application).

coming from a gas generator.¹⁷ The surface of each plate 12 that faces the other plate 12 is coated with a coating material 16 configured to reduce the amount of gas that escapes through an interface between the edges 22 of the drive band 20 and the facing surfaces of the plates 12.¹⁸

As the coating material 16 is easily and readily applied to the plates 12, the drive unit 10 according to the present invention is both easier and cheaper to manufacture than current second generation drive bands.¹⁹ Moreover, the easily manufactured drive unit enjoys a better and more consistent seal between the drive band 20 and the plates 12. As a result, the pressure between the plates 12, when the high-pressure gas is released therebetween, is greater than drive units using conventional drive bands.²⁰

(6) ISSUES

The instant appeal presents the following issue for review: Are claims 11-20 are unpatentable under 35 U.S.C. § 103(a) when considering U.S. Patent Nos. 5,553,803 (“Mitzkus”) in view of 6,250,720 (“Wier”)?

(7) GROUPING OF CLAIMS

Claims 11 and 14-20 were rejected under 35 U.S.C. § 103(a) as being obvious when considering Mitzkus in view of Wier. Claims 12 and 13, both of which depend from claim 11, were rejected under 35 U.S.C. § 103(a) as being obvious when considering Mitzkus in view of Wier and further in view of Stephens. For purposes of this appeal only, and for each ground of rejection, claims 11-20 are allowable over the cited references for the same reason.

¹⁷ *See id.*

¹⁸ *See* p. 4, lines 17-19, p. 5, line 20 – p. 6, line 2 (¶¶ [0019] and [0024] of the published application).

¹⁹ *See* p. 2, lines 14-22 (¶ [0007] of the published application).

²⁰ *See id.*

Accordingly, claims 11-20 stand or fall together. Argument for the patentability of claims 11-20 is hereafter set forth in § (8).

(8) ARGUMENT

The rejections of claims 11-20 under 35 U.S.C. § 103(a) should be reversed because there is no motivation to combine Mitzkus and Wier to arrive at the claimed invention other than impermissible hindsight reasoning. In addition, Stephens, which was applied in conjunction with Mitzkus and Wier to reject dependent claims 12 and 13, fails to provide the lacking motivation to combine Mitzkus and Wier and, therefore, a combination of all three references can not be used to reject independent claims 11 and 20, or any claim dependent thereon, under § 103(a). As a result, the final rejections of claims 11-20 are a result of the Examiner's misunderstanding of the current law on obviousness.

I. THE LAW OF OBVIOUSNESS

Title 35 U.S.C. § 103(a) (1994) provides (with italic emphasis added):

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious *at the time the invention was made* to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The determination that a finding of obviousness must be made while considering the state of the art "at the time the invention was made" is required to avoid an impermissible hindsight reconstruction.²¹

In applying 35 U.S.C. § 103(a), Supreme Court set forth a three-part test.²² Specifically, the Court said that in ascertaining whether a claim is obvious, the Examiner

²¹ See *W.L. Gore & Assoc. v. Garlock, Inc.* 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983); see also M.P.E.P. § 2141.01(III).

must: (a) determine the scope and content of the prior art; (b) ascertain the differences between the prior art and the claims in issue; and (c) resolve the level of ordinary skill in the pertinent art.²³ Further, the Federal Circuit has made clear that the following tenets must be also applied: (a) the claimed invention must be considered as a whole; (b) the references must be considered as a whole; (d) the references must *suggest the desirability of making the combination*; (d) the references must be viewed *without the benefit of hindsight* afforded by the claimed invention; and (e) there must be a reasonable expectation of success that the references, when combined, will yield the recited invention.²⁴

Pursuant to the aforementioned law, to establish a *prima facie* case of obviousness, the PTO has set forth the following requirements: (a) “there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings”; (b) “there must be a reasonable expectation of success”; and (c) “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”²⁵ With respect to the first and second requirements, the “teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant’s disclosure.”²⁶ In addition, with respect to the third requirement, when determining whether a reference teaches or suggests a particular claim limitation, the Examiner is entitled to consider that which is implicitly disclosed in the reference.²⁷

²² See *Graham v. John Deere*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966)

²³ See *id.*; see also M.P.E.P. § 2141.

²⁴ *Hodosh v. Block Drug Co.*, 786 F.2d 1136, 1143 n. 5, 229 U.S.P.Q. 182, 187 n. 5 (Fed. Cir. 1986).

²⁵ M.P.E.P. § 2142.

²⁶ M.P.E.P. § 2143 (citing *In re Vaeck*, 947 F.2d 488 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991)) (italic and underline emphasis added). The motivation may be either explicitly or implicitly stated in the references. See M.P.E.P. § 2143.01 (citing *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000)).

²⁷ See M.P.E.P. § 2144.01 (citing *In re Preda*, 401 F.2d 825, 826, 159 U.S.P.Q. 343, 344 (C.C.P.A. 1968)).

Finally, the burden of persuasion to maintain an obviousness rejection is a preponderance of the evidence, *i.e.*, the Examiner's arguments in favor of the rejection must outweigh an applicant's arguments in opposition to such a finding.²⁸

II. THE REJECTION OF CLAIMS 11-20 UNDER 35 U.S.C. § 103(a) SHOULD BE REVERSED BECAUSE THERE IS NO MOTIVATION TO COMBINE MITZKUS AND WIER

A. REJECTION OF CLAIMS 11-19

i. REJECTION OF CLAIMS 11 AND 14-19

Independent claim 11 recites a drive unit for a safety belt tensioner having a drive and being capable of being triggered. The drive unit includes, among other things (*italic emphasis added*):

a drive chamber configured to contain the drive and including two connected plates extending parallel to one another;

wherein the drive chamber includes a drive band having at least one end fastened to a drive shaft;

wherein an interior of the drive chamber is adapted to be exposed to an expanding gas coming from a gas generator;

wherein the surface of each plate that faces the other plate is coated with a coating material configured to reduce the amount of gas that escapes through an interface between the edges of the drive band and the facing plate surfaces.

The Examiner admits that Mitzkus fails to teach or suggest a coating material applied to the inner surfaces of the plates.²⁹ As a result, the Examiner turned to the teachings of Wier to cure the deficiencies of Mitzkus. However, the Examiner also admits that Wier fails to explicitly teach a problem with the seal.³⁰ Yet, even after acknowledging that neither reference teaches the recited seal, the Examiner justified a motivation to combine Mitzkus and Wier on the ground that: (a) for the device in Mitzkus to function, a seal inherently exists between the endwalls 51, 52 and the drive bands 21; and (b) the mere implicit existence of a seal, *without any teaching or suggestion as to the insufficiency of that seal*, provides

²⁸ See M.P.E.P. § 2142 (citing to *In re Oetiker*, 977 F.2d 1442, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992)).

motivation to improve the seal in a manner such as that taught by Wier.³¹ Applicants strongly contest this motivation to combine as being a clear misapplication of the law of obviousness.

As previously discussed, the Federal Circuit requires that, when deciding whether a claim is obvious in view of two references, the references must: (a) *suggest the desirability of making the combination* and; (b) be viewed *without the benefit of hindsight* afforded by the claimed invention.³² Moreover, the “teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, *not in applicant’s disclosure.*”³³

Contrary to this controlling authority, the Examiner asserts that a motivation exists to combine Mitzkus and Wier solely on the ground that Mitzkus implicitly teaches a seal, without any teaching or suggestion as to the insufficiency of that seal. The Examiner, however, can not look for ways to improve Mitzkus’ seal absent a teaching or suggestion *in the references* that Mitzkus’ seal is insufficient.

Moreover, the only teaching in Mitzkus is that the seal is sufficient and, therefore does not need to be improved. Specifically, the seal in Mitzkus is described as being tight enough to necessitate “vent openings 37 which lead to the surrounding atmosphere . . . at the concave side of the sealing walls 29 and prevent an excessive pressure build up in the partial chambers 23” on triggering of the additional drive.”³⁴ Clearly, where Mitzkus provides vent openings 37 to prevent an excessive pressure build up, the reference directly and explicitly teaches that

²⁹ See Office Action mailed November 25, 2003 at p. 2.

³⁰ See Advisory Action at continuation page.

³¹ Wier teaches using a coating material (wax) to enhance a seal between a moving member (cable 11) and a non-moving member (sleeve section 43 of cylinder 5). See Wier at col. 6, lines 1-6.

³² *Hodosh v. Block Drug Co.*, 786 F.2d 1136, 1143 n. 5, 229 U.S.P.Q. 182, 187 n. 5 (Fed. Cir. 1986).

³³ M.P.E.P. § 2143 (citing *In re Vaack*, 947 F.2d 488 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991)) (*italic emphasis added*). The motivation may be either explicitly or implicitly stated in the references. See M.P.E.P. § 2143.01 (citing *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000)).

³⁴ Col. 7, lines 23-27.

the seal is sufficient and does not need to be improved. As a result, Mitzkus teaches away from the claimed invention.

Finally, Applicants note that the only evidence of a problem with this type of seal is located in Applicants' own disclosure which provides:

The performance of such a drive unit depends, among other things, on the amount of the pressure which builds up through the expanding gas inside the space which is formed by the plates and a loop formed by the drive band. The pressure building up is, however, reduced by gas which escapes via the interface drive band/plates.³⁵

Any reliance the Applicants' disclosure, however, amounts to an impermissible hindsight reasoning contrary to the law set forth in *Vaeck*.³⁶

For at least these reasons, Mitzkus and Wier can not properly be combined under 35 U.S.C. § 103(a) to reject independent claim 11. Moreover, as claims 14-19 depend from claim 11, each of these dependent claims is also allowable over the combination of Mitzkus and Wier, without regard to the other patentable limitations recited therein. Accordingly, Applicants respectfully request a withdrawal of the rejection of claims 11 and 14-19 under 35 U.S.C. § 103(a) as being obvious when considering Mitzkus in view of Wier.

ii. REJECTION OF CLAIMS 12 AND 13

The Examiner rejected claims 12 and 13 under 35 U.S.C. § 103(a) as being obvious when considering Mitzkus in view of Wier further in view of Stephens. For at least the following reasons, Applicants continue to respectfully traverse this rejection.

As previously mentioned, neither Mitzkus nor Wier teaches or suggests a problem with the seal between the drive bands 21 and the endwalls 51, 52 in Mitzkus and, therefore, there no motivation exists to combine Mitzkus and Wier. As a result, Wier fails to cure the

³⁵ P. 1, lines 19-23 (¶ [0002] of the published application).

³⁶ See *In re Vaeck*, 947 F.2d 488 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); see also M.P.E.P. §§ 2141 (subsection entitled: "Basic Considerations Which Apply to Obviousness Rejections" which provides: "When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to: . . . (C) The references must be

deficiencies of Mitzkus. Stephens, which teaches layering materials to form a seal, also fails to cure this deficiency.³⁷ Moreover, Stephens (when viewed as a whole), like Mitzkus, teaches away from the Applicants' invention (when viewed as a whole)³⁸ Specifically, whereas Applicants teach that the coating material 16 may be non-uniformly applied,³⁹ Stephens teaches that it is "important that the coating 27 be *uniformly* distributed over the entire outer cylindrical surface of the case 13[.]”⁴⁰

Accordingly, the combination of Mitzkus, Wier, and Stephens can not be used to reject claim 11, or any claim dependent thereon, under 35 U.S.C. § 103(a). Moreover, as claims 12 and 13 depend from claim 11, each of these dependent claims is also allowable over the combination of Mitzkus, Wier, and Stephens, without regard to the other patentable limitations recited therein. Therefore, Applicants respectfully request a withdrawal of the rejection of claims 12 and 13 under 35 U.S.C. § 103(a).

viewed without the benefit of impermissible hindsight vision afforded by the claimed invention.”), 2141.01(III), and 2142.

³⁷ See U.S. Pat. No. 2,889,163 at col. 4, lines 66-69.

³⁸ See *Hodosh v. Block Drug Co.*, 786 F.2d 1136, 1143 n. 5, 229 U.S.P.Q. 182, 187 n. 5 (Fed. Cir. 1986).

³⁹ See p. 3, lines 3 – 17 (¶¶ [0009] – [0011] of the published application).

⁴⁰ See U.S. Pat. No. 2,889,163 at col. 3, lines 47-49.

B. REJECTION OF CLAIM 20

Similar to independent claim 11, independent claim 20 recites a safety belt tensioner having a drive unit which includes, among other things (italic emphasis added):

a drive chamber configured to contain the drive unit and including two connected plates extending parallel to one another;

wherein the drive chamber includes a drive band having at least one end fastened to a drive shaft;

wherein an interior of the drive chamber is adapted to be exposed to an expanding gas coming from a gas generator;

wherein the surface of each plate that faces the other plate is coated with a coating material configured to reduce the amount of gas that escapes through an interface between the edges of the drive band and the facing plate surfaces.

The italicized limitation in claim 20 is identical to the italicized limitation previously discussed with respect to claim 11. Accordingly, the same arguments previously set forth with respect to the impropriety of combining Mitzkus and Wier to teach this limitation in claim 11 are equally applicable to claim 20. Therefore, for the reasons set forth above, Applicants respectfully request a withdrawal of the rejection of claim 20.

III. CONCLUSION

For at least the foregoing reasons, the Board of Patent Appeals and Interferences should reverse the 35 U.S.C. § 103(a) rejections of claim 11-20.

The Appendix § 9 contains a clean copy of the claims on appeal.

The Patent Office is invited to contact the undersigned attorney of record at the telephone number set forth below if it is believed that a telephone conference might be useful in expediting prosecution or resolving any or all of the issues on appeal.

Respectfully submitted,

Date May 5, 2004



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(9) APPENDIX

CLEAN COPY OF PENDING CLAIMS

11. (Previously Presented) A drive unit for a safety belt tensioner having a drive and being capable of being triggered, the drive unit comprising:

a drive chamber configured to contain the drive and including two connected plates extending parallel to one another;

wherein the drive chamber includes a drive band having at least one end fastened to a drive shaft;

wherein an interior of the drive chamber is adapted to be exposed to an expanding gas coming from a gas generator;

wherein the surface of each plate that faces the other plate is coated with a coating material configured to reduce the amount of gas that escapes through an interface between the edges of the drive band and the facing plate surfaces.

12. (Previously Presented) The drive unit of claim 11, wherein the coating material has a plurality of layers.

13. (Previously Presented) The drive unit of claim 12, wherein the coating material has layers of different materials.

14. (Previously Presented) The drive unit of claim 11, wherein the thickness of the coating material varies in different sections of the surfaces of the plate.

15. (Previously Presented) The drive unit of claim 11, wherein the coating material has one or more films.

16. (Previously Presented) The drive unit of claim 15, wherein the films for the coating of the plates are adhesive or are applied by means of an adhesive.

17. (Previously Presented) The drive unit of claim 11, wherein the coating material is soft.

18. (Previously Presented) The drive unit of claim 11, wherein the drive band includes edges partly penetrating into the coating material.

19. (Previously Presented) The drive unit of claim 11, wherein a surface-near layer of the coating material is configured to be removed by the drive band and pile up in front of the drive band in the direction of expansion on the triggering of the drive and thus additionally reduces the gas exchange through an interface between the band and the plate surfaces.

20. (Previously Presented) A safety belt tensioner having a drive unit comprising:
- a drive chamber configured to contain the drive unit and including two connected plates extending parallel to one another;
 - wherein the drive chamber includes a drive band having at least one end fastened to a drive shaft;
 - wherein an interior of the drive chamber is adapted to be exposed to an expanding gas coming from a gas generator;
 - wherein the surface of each plate that faces the other plate is coated with a coating material configured to reduce the amount of gas that escapes through an interface between the edges of the drive band and the facing plate surfaces.